CHINA'S WHEAT IMPORTS

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China's Wheat Imports

China is the most populous country in the world with 1.1 billion people, and food has always been one of the most important issues of the nation. In 1987 China imported about 16 million tons of grain to meet the domestic demand, and wheat accounts for 82% of total grain imports. Since 1960 China's wheat imports have been growing at a rapid pace, especially after 1977. The increase of wheat imports is equated with the growing gap between domestic production and consumption. Wheat production has been growing very fast in the last decade, but the consumption growth is more remarkable, far exceeding the former, thus bringing the surge in wheat imports. In this report, I will look at the factors contributing to that development, with an emphasis on the period after 1978. I will also try to predict the likely future trend.

First, an overview of China's wheat imports is given which will show the changes both in volume and in trade direction. Second, an equation is set up to explain the factors affecting wheat imports. Since wheat production and consumption greatly influence wheat imports, a careful analysis will be given of both the production and the consumption situation. Third, wheat imports are also directed by China's wheat import policy and some other

reasons which will be discussed in this section. Finally, I'll look at the future trend of China's wheat imports.

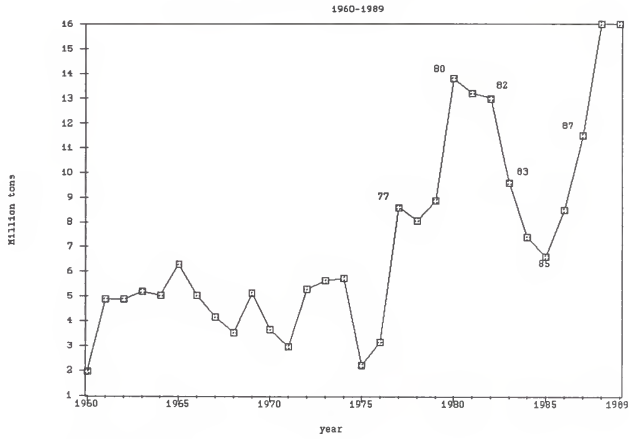
I. Overview.

China's wheat imports have been increasing since 1960 although there are some up and downs (see Figure 1 and Table 2). Before 1977 wheat imports plateaued around 5 million tons. There was an upsurge in 1977 to a record of 8.6 million tons; wheat imports jumped to about 13 million tons in 1980-1982, creating a new record. In 1984-1985 when China had a great wheat harvest, imports fell. In 1986-1987 China resumed its high level of imports.

The figure shows another phenomenon: China's imports fluctuated quite a bit all the way through the past 28 years. This instability reflects the complex factors affecting wheat imports.

As for the trade partners, China has five major wheat suppliers (see Table 1). Among them, Canada and Australia have been the major and consistent suppliers of wheat to China. Imports from Canada ranged from a low of 21 percent to a high of 61 percent. On average, Canada supplies over one-third of China's total imports. Australia is also very important to China's wheat market. Its share ranged from 9 percent up to 54 percent and averaged 26.7 percent in the past 15 years. Since 1972 the U.S. has played an active role in China's wheat imports, but its market share has

Figure 1: China's wheat imports



Source: Table 2

fluctuated drastically, accounting for 64 percent of total imports in some years, and for no wheat at all in other years. Its average share is 26.7 percent in the past 15 years. Argentina also has been a fairly consistent supplier, supplying as much as 15 percent of total imports in some years, while in some years it has not participated in that market. China sporadically imports some wheat from EEC, with imports running as high as 11 percent in 1982. But in most years the EEC is only a small supplement to China's wheat market.

Table 1 -- China's major wheat suppliers

Year[1]	Argentina		Australia		Canada		EEC		USA		World[2]	
	1000MT	Percent	1000MT	Percent	1000MT	Percent	1000MT	Percent	1000MT	Percent	1000MT	Percent
1973	0	0.0	1239	21.2	1367	23.4	26	0.4	3190	54.7	5831	100
1974	210	3.8	1244	22.6	2366	43.0	180	3.3	1496	27.2	5496	100
1975	0	0.0	1126	48.3	1204	51.7	0	0.0	0	0.0	2330	100
1976	477	15.1	750	23.8	1929	61.1	0	0.0	0	0.0	3156	100
1977	373	4.4	4603	54.0	3321	39.0	0	0.0	225	2.6	8522	100
1978	885	11.0	1382	17.2	3181	39.5	0	0.0	2610	32.4	8058	100
1979	465	5.4	3575	41.2	2621	30.2	90	1.0	1929	22.2	8680	100
1980	200	1.5	1397	10.1	2911	21.1	607	4.4	8662	62.9	13777	100
1981	199	1.5	1413	10.7	2991	22.6	116	0.9	8504	64.3	13223	100
1982	1956	15.1	1170	9.0	4242	32.7	1410	10.9	4186	32.3	12964	100
1983	1010	10.3	1660	17.0	3848	39.3	137	1.4	3131	32.0	9786	100
1984	673	9.2	1399	19.1	2737	37.3	82	1.1	2440	33.3	7331	100
1985	566	8.6	2704	50.0	2587	39.2	252	3.8	542	8.2	6600	100
1986	813	10.8	2984	39.8	2604	35.2	617	8.2	91	1.2	7500	100
1987	299	2.2	2169	16.1	5820	43.1	25	0.2	3500	25.9	13500	100

Source: 1) World Grain Situation and Outlook. Foreign Agricultural Services, United States Department of Agriculture, December 1985.
2) Data from 1985-1987 are from China: Agricultural and Trade Report. Economic Research Service, US Department of Agriculture, June 1988.

1. July-June marketing year
2. This figure is different from that in Table 2 due to different sources. This is based on data collected by the International Wheat Council, London.

Table 2 -- Wheat supply and use, 1960-89

Year	Production	Begin stocks	Total import	Total export	Total consumption	Feed use	Seed use	Food consumption	Ending stock	Change in stock
	----------	----------	----------	----------	----------	1,000 tons	----------	----------	----------	----------
1960	20960	4000	1949	2	23907	400	4884	18623	3000	-1000
1961	14250	3000	4893	122	20521	250	4598	15673	1500	-1500
1962	16665	1500	4892	89	19268	300	4540	14428	3700	2200
1963	18475	3700	5208	113	23070	500	4853	17717	4200	500
1964	20840	4200	5032	115	26257	550	4719	20988	3700	-500
1965	25220	3700	6282	4	30998	650	4569	25779	4200	500
1966	25280	4200	5025	30	30275	600	4832	24843	4200	0
1967	28485	4200	4156	13	29628	600	4710	24318	7200	3000
1968	27455	7200	3537	1	30991	600	4806	25585	7200	0
1969	27285	7200	5125	1	32909	700	4862	27347	6700	-500
1970	29185	6700	3661	3	32343	700	4897	26746	7200	500
1971	32575	7200	2968	5	33538	700	5024	27814	9200	2000
1972	35985	9200	5290	5	37270	800	5050	31420	13200	4000
1973	35225	13200	5645	5	41365	900	5169	35296	12700	-500
1974	40865	12700	5746	5	41606	900	5283	35423	17700	5000
1975	45310	17700	2200	0	43510	950	5428	37132	21700	4000
1976	50385	21700	3158	0	48543	1100	5360	42083	26700	5000
1977	41075	26700	8600	0	51675	1000	5574	45101	24700	-2000
1978	53840	24700	8047	0	52887	1200	5607	46080	33700	9000
1979	62730	33700	8865	0	66595	1500	5583	59512	38700	5000
1980	55210	38700	13789	0	75999	1600	5407	68992	31700	-7000
1981	59640	31700	13200	0	78840	1700	5337	71803	25700	-6000
1982	68420	25700	13000	0	79420	1700	5549	72171	27700	2000
1983	81390	27700	9600	0	82990	1800	5649	75541	35700	8000
1984	87820	35700	7400	0	92220	2100	5581	84539	38700	3000
1985	85810	38700	6600	0	100410	2300	5659	92451	30700	-9000
1986	90295	30700	8500	0	101795	2400	5526	93869	27700	-3000
1987	87000	27700	11500	0	103500	2500	5654	95346	22700	-5000
1988	87500	22700	16000	0	106000	--	--	--	20200	-2500
1989	91000	20200	16000	0	107000	--	--	--	20200	0

Source: 1) Frederic W. Crook, "China's Wheat Economy", unpublished, 1989.
2) Data for 1988 and 1989 are projections contained in GRAINS, Foreign Agricultural Service, US Department of Agriculture, June 1989.

II. China's Wheat Market

The amount of wheat imported is closely related to the domestic wheat market, that is, the change of supply and demand. Expressed as an equation, we can write:

Import = Demand - Supply

= Total consumption + $Stock_{i+1}$ - Production - $Stock_i$, where

i -- refer to the current year

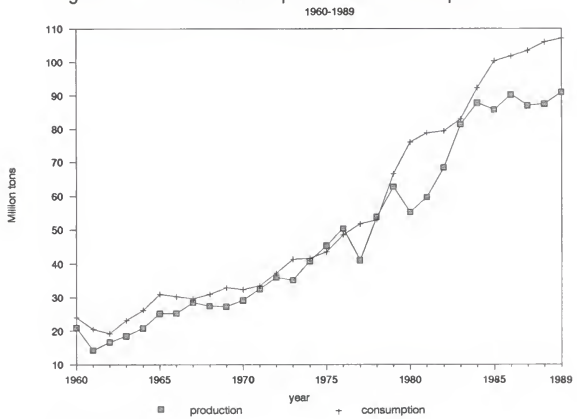
$Stock_i$ -- beginning stock

$Stock_{i+1}$ -- ending stock

Figure 2 shows that both wheat production and consumption have been increasing rapidly, especially after 1978, and that consumption growth outpaced production growth. Figure 3 shows that the change in stocks ($Stock_{i+1}$ - $Stock_i$) fluctuates, showing no clear upward or downward trend. Therefore, increasing consumption is mainly responsible for the spurt in China's wheat imports.

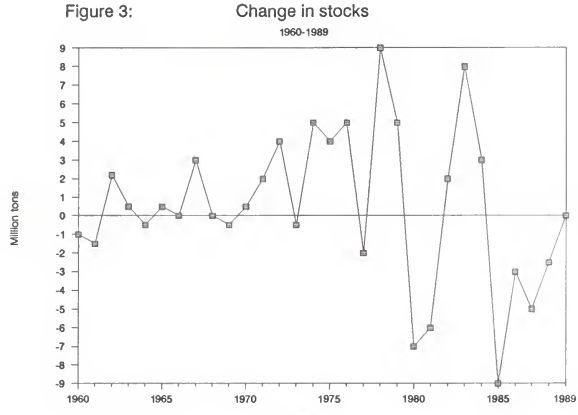
The fluctuation of production, consumption and stocks has direct effect on wheat imports. In 1975-1976 wheat production jumped above the wheat consumption level, and there was an oversupply of wheat. Hence, stocks increased, and imports fell to about 2-3 million tons. But in 1977, when production plummeted and consumption kept rising, a severe short supply occurred. The stocks decreased sharply, and imports jumped to a record high level. The same situation happened in 1980. In 1981 and 1982, although

Figure 2: China's wheat production & consumption



Source: Table 2

Figure 3: Change in stocks



Source: Table 2

production grew faster than the rate of consumption, it still lagged behind. The ending stocks were still low and the imports still high. When production moved closer to the consumption level in 1983, stocks increased and imports slipped down rapidly.

Figure 2 exhibits another interesting fact: consumption goes up steadily, without large decreases, while production has experienced sharp decreases in certain years. This section examines the major factors underlying wheat production and consumption and tries to infer some implications for future trends.

1. Production

Coinciding with other agricultural developments in China, China's wheat production has also experienced two distinct periods of growth. Before 1978, the production increase was moderate. Wheat output grew by 96 percent between 1960 and 1977, an average annual growth rate of 4.0 percent. After 1978, the production rise was remarkable. Wheat output grew at an average annual rate 8.5 percent from 1978 to 1984.

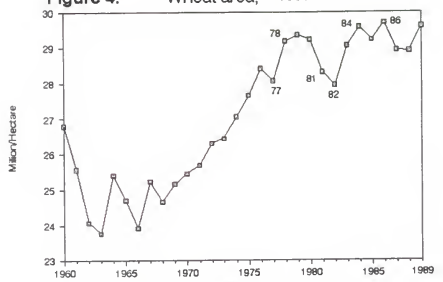
This variation in production growth rates is related to other changes in China. Before 1978, the central planning system dominated the economy. Decisions about what to produce and how to produce were not determined by farmers, but instead by the government. The free market barely existed during this period and there was no direct linkage between production,

price and profit. And naturally the productivity was low and there was no incentive for farmers to improve productivity and efficiency.

After 1978, China embarked on economic reform and increased the role of free markets, encouraged specialized production, and introduced the Household Production Responsibility System (HPRS). The commune-based organizational structure gave way to 15-year land leases, and to the hiring of up to seven outside workers per household (Calkins, 1988, p. 12). The guided plan has replaced the central mandatory plan, and the farmers now have more freedom to decide what to produce and how to produce. The resumption of the free market system has enabled farmers to sell some of their products to the free market after they fulfill the government plan. Therefore farmers have great incentives to produce more, to minimize production costs and to increase productivity. Meanwhile, the government raised wheat procurement prices as an another measure to encourage wheat production. This higher enthusiasm of farmers led to higher wheat yields (Figure 5).

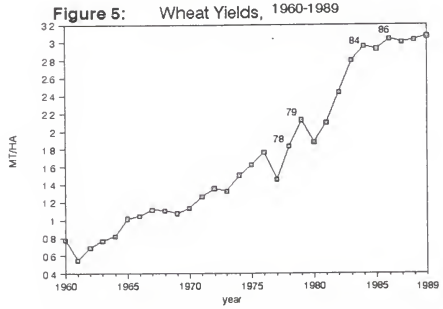
Wheat yields increased at a 8.2% annual rate from 1978 to 1984 compared to 5.3% from 1960 to 1976. Clearly, yield increases have been the driving force behind the rapid increases in wheat output (Figure 6). The steady rise in yields was also due to several other factors, including an expansion of irrigated area, increased use of chemical

Figure 4: Wheat area, 1960-1989



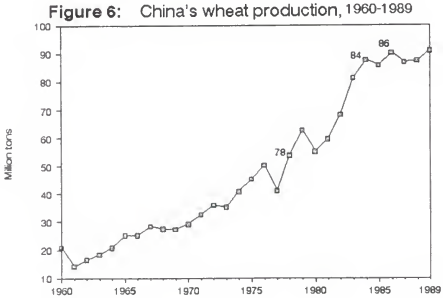
Source: GRAINS. F.A.S., U.S.D.A., February 1988 & June 1989

Figure 5: Wheat Yields, 1960-1989



Source: GRAINS. F.A.S., U.S.D.A., February 1988 & June 1989

Figure 6: China's wheat production, 1960-1989



Source: Table 2

fertilizers and improved seeds consisting of the High Yield Varieties.

Farmers have invested heavily in building irrigation and drainage systems in the past 30 years. While the overall expansion of irrigated area has been impressive, the digging of tube wells on the North China Plain, which is the major winter wheat producing region, has probably provided an important boost to wheat yields (Crook, 1989).

Traditionally, farmers applied large amounts of organic fertilizers and some chemical fertilizer to wheat fields. With the enhancement of literacy in rural areas and the spread of knowledge about technical achievements, more and more farmers realized the importance of the use of chemical fertilizer, and they increased its utilization. But there is little data on quantities per unit area.

It has long been a goal for China's agronomists to improve wheat varieties. Improved varieties come from two channels -- domestic and international. Varieties have been developed to meet local requirements, such as early maturing varieties, short straw varieties needed for wheat grown under irrigated conditions, and varieties with resistance to scab and to leaf and stripe rust. China's plant breeders have also been active in collecting genetic materials from international centers such as the International Maize and Wheat Improvement Centre (CIMMYT) in Mexico, and from other countries including the United States, Canada, Australia, France, the U.S.S.R. and

Romania (Crook, 1989).

Compared to the wheat area harvested in 1960 which was 26.8 million hectares, there was a 4.48% increase in the wheat area in 1977, to 28 million hectares, but there was only a 1% increase from 1978 to 1984 and the area has been relatively constant from 1984 to 1989 (Figure 4). But during the last two periods, the wheat area first decreased and then increased. Wheat areas were reduced due to nonfarm use near urban areas, such as expansion of housing, factories, and road construction. Reclamation of new regions increased the area sown. But in the future the wheat area will not expand much because there is little land that can be economically reclaimed (Tuan, 1987).

After several years of continued growth, the growth rate of wheat production slowed down since 1985. There was no growth in wheat production during 1985-1987. The background was complicated. The sharp increase of wheat production has not been matched by increases in the storage and transportation infrastructure, and the local wheat processing industry was still underdeveloped. Therefore, there was an oversupply in the local wheat market and the market price of wheat fell. Meanwhile, the market prices of inputs such as fertilizer and machinery was increased during the transition reform period. The dual price system (a subsidized food price to the urban consumers and at the same time the high procurement price to the farmers) increased the budget burden

of the Chinese government. This burden prohibited the further rise of government's procurement prices. All these affected farmers' incentives to produce more.

As the profit of wheat production declined, some farmers shifted their production to other cash crops, or began running transportation and other businesses. Consequently, the wheat area decreased and, without a large increase in wheat yields, wheat production slowed down.

There is still some hope for higher wheat yields provided further technical advancement and the smooth development of China's price reform. But the future is not so optimistic because of the complex and arduous political and economic environment in China. In summary, due to the likely limited wheat area growth and to the likely limited future rise in wheat yields, wheat production will not increase much in future.

2. Consumption

The remarkable growth of China's wheat production has been paralleled by a very rapid increase in wheat consumption. From 1960 to 1977 the annual average rate of growth was 4.6%, and from 1978 to 1987 it was 7.7%. Most of the wheat (about 85-90 percent) is demanded for direct human consumption, and only little is for feed, seed and industrial use (Woodhams, 1986, pp. 56).

Wheat consumption increased rapidly due to income

increase, urbanization, population growth and the subsidized wheat price.

(1) Income increase

China's economic reform and open door policy have had profound effects on peoples' lives. Most significant is the rising income of both the urban and rural consumers, and the consequent changing attitudes toward life. As incomes kept rising, consumption habits changed correspondingly. People tended to consume more fine grains and less coarse grains. Rural survey data shows that from 1978 to 1987 per capita grain consumption rose only 4.4%, from 248 kilograms to 259 kgs. But fine grain consumption such as rice and wheat increased 71%, from 123 kilograms per person to 211 kilos, and the consumption of coarse grains such as corn, sorghum, barley, oats and potatoes fell from 125 kilos to 48 kilos in the same period, a decrease of about 62% (Crook, 1989). There was a less dramatic change for urban residents because by the early 1980s fine grains already constituted a large percentage of total grains consumed in the cities while coarse grain consumption made up only a small portion of the total. Yet rising incomes enabled urban residents to consume more wheat products such as noodles, bread and pastries as convenience foods, which are more expensive than rice and wheat flour. Also, wheat consumption increased in the big cities of the "rice-consumption" areas in southern China, and thus the

people diversified their diet.

(2) Urbanization

During the process of economic reform some farmers were released from agricultural production; they joined the rural enterprises or moved to the urban areas. This migration during the process of industrialization is another major cause of increased wheat consumption.

Urbanization changes consumers' preferences toward convenience foods. Working habits and lifestyles favor the purchase of prepared or semi-prepared foods, rather than those which have to be processed at home. Wheat bread and sandwiches have this kind of advantage (Woodhams, 1986, pp. 16). This tendency to eat convenience foods such as bread and noodles has recently been reinforced by an official shortening of the lunch hour, so that more food has to be bought for immediate consumption. Female participation in the labor force also reinforces this trend. And as the growth of urban population increases, the demand for wheat follows.

Urban areas are mainly along the coast, and it is easier and cheaper to supply these urban residents with imported wheat than to bring rice or other grains over the heavily congested internal transport systems (Woodhams, 1986, pp. 56).

(3) Population growth

Due to the birth control program enacted in the early 1970s, population growth in China has slowed down. In the 1960s the growth rate was nearly 3 percent, but the rate fell to 1.5 percent in the 1970s, and is expected to average 1.2 percent for the rest of the century (Woodham, 1986, pp. 14). But because of the large population base there will still be about a 22 million increase annually even under the 1.2 percent rate. Thus population growth constitutes an important factor in determining the direction of wheat consumption.

(4) Subsidized Wheat Price

The price of wheat products is usually higher than the price of competing food staples such as rice and coarse grains. This is due partly to the complex processing procedures needed before wheat can enter final consumption. But government usually subsidizes wheat consumption due to the lower wheat price in the world wheat market and for some other reasons (Byerlee, 1987). This plus the effect of rising incomes and urbanization has caused the upward trend of wheat consumption.

The development of the wheat processing industry, especially in large cities, helped the trend. And wheat market promotion and development efforts of firms from wheat exporting countries played a role in it (Schneiter, 1987). The news media have reported the establishment of Macdonalds restaurants, and fast food hamburger stands in Beijing,

Shanghai, Guangzhou and some other big cities.

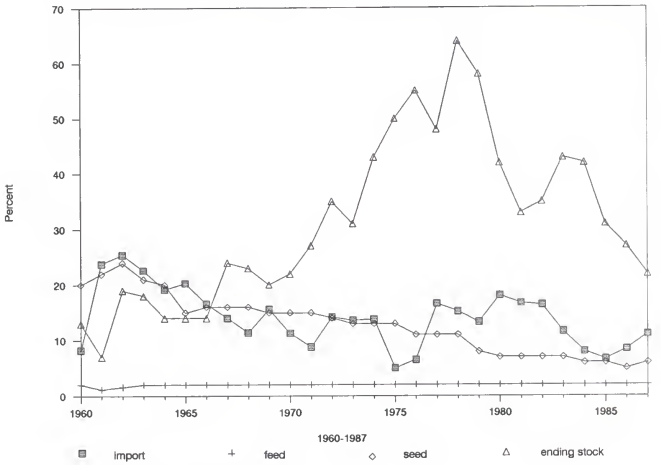
The optimism and high expectations for further economic growth in the early 1980s further boosted the consumption increase, and once the new consumption habit is formed, it is not easy to change. This explains the fast and steady increase of wheat consumption even when there was a short supply.

Nonfood consumption of wheat, which include feed, seed, industrial use and waste constitutes about 10-15% of the total use. Due to the rising incomes and improving living standard, there is a tendency for people to consume more meat, which pushes the development of the feed industry. But the higher price of wheat relative to coarse grains prevents a large use of wheat for livestock production. So only about 2 percent of the total wheat available to consumption is used for this purpose. Some wheat is used as feed as a result of damage by insects, rodents or mildew, and some because of the costly transportation to outside to fetch a higher price (Crook, June 1988, pp. 27).

Seed use has declined from about 18% of total consumption in the 1960s to only 7% in the 1980s as a result of improved seed varieties and rising yields (see Figure 7).

The rest (1-6%) goes to industrial use and waste, but there is very little published data to support this estimate. In Table 2, these uses are included in the food consumption figure (Crook, 1989).

Figure 7: Import,feed use,seed use & ending stock as proportion of total wheat consumption



Source: Calculated based on Table 2.

Summing up, while the future production increase might not be that large, the consumption of wheat is still on the upward trend. Thus, increasing imports can be expected in future.

III. China's Wheat Import Policy

China is still a centralized planned economy, and wheat imports are controlled and planned by the central government. Alongside market supply and demand, the government can to a

large extent affect and guide the direction of trade. So the government's import policy plays a very important role.

China was a net grain importer from 1960 to 1987, except in 1985 and 1986. In that period China was a net rice exporter, shipping an average of just under 1.2 million tons per year, and a net wheat importer, importing an average of 6.9 million tons of wheat a year. The large amount of rice export, it is claimed, is due to the price factor. It has long been the rule in the world market that the price ratio of rice to wheat is 2 to 1, that is, one unit of rice trades for 2 units of wheat. Clearly, in terms of quantities, it is advantageous for China to export rice in exchange for wheat even if rice may be more preferred in food consumption. As I remember, during some years in 1970s, the government rationed a certain amount of wheat products (flour and noodles) to go with rice each month, even though I would choose rice if I could.

Both the large population and ideological reasons have led the Chinese government to seek to be independent and self-sufficient as much as possible, to avoid being vulnerable to the outside world. This is reflected in two ratios: ending stocks to total consumption, and imports to total consumption. Figure 7 shows that ending stocks are kept rather high, averaging about 30% of total consumption. Imports are relatively low, at about 15% of total consumption in normal years.

Transportation is also a factor in import policy. In some large cities it is easier and cheaper to ship in wheat from abroad than from China's hinterland because of the undeveloped transportation system.

Political relationship is considered when choosing a trade partner. This is seen most clearly in the Sino-U.S. relationship. Before 1972 when there was no official contact between the two countries, there were no wheat imports from U.S. After 1972, and especially following the normalization between the two countries in 1978, the Sino-U.S. wheat trade has steadily developed.

IV. The Future Trend

China is a populous country, and in the years to 2000 and beyond its population will be growing. Along with rising per capita income, China's demand for wheat will continue to grow at a rapid pace. This consumption growth, coupled with slowing production growth, makes it likely that import levels will begin to trend upward again in the latter part of the decade, although high stocks may further depress imports for the next year or two (Surls, 1985, p.26).

But one fact to be noted is that China is a developing country, and foreign exchange is very scarce. It is possible that the government will not allow much hard currency to be used for wheat imports. Also, ideology will lead China never to commit to permanently increasing reliance on foreign

sources of basic commodities. Therefore, even though there will be a higher demand for wheat consumption, the import of wheat may be adjusted according to government policy. For exporters of wheat to China, the future is bright, but it is also uncertain. As far as trade partners are concerned, there will be little change as long as there is no critical change in China's foreign relationships.

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CHINA'S WHEAT IMPORTS

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AN ABSTRACT OF A MASTER'S REPORT

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ABSTRACT

Wheat is a major food staple in China, and wheat imports accounted for about 80% of China's total grain imports in the last three decades. Since 1960 China's wheat imports have been increasing rapidly, especially after 1977. The increase in wheat import is due to the growing gap between the domestic production and consumption.

Wheat production grew very fast during 1978-1984, but slowed down after 1985. The restructuring of the agricultural system at the end of the 1970s stimulated farmers' incentives to improve productivity and efficiency, and this led to a sharp rise in wheat yields. This is the driving force behind the rapid increase of wheat output. Wheat area sown is another major factor affecting production.

Over the same period, wheat consumption kept rising without large decreases, and the trend is still upward. Rising income of both urban and rural consumers is the main cause pushing up the consumption, and urbanization, population growth and subsidized wheat price also play a role in it. Therefore, the rise of import is inevitable. The favourable world market price serves as an external factor influencing the large import of wheat. In the years to 2000, and beyond, wheat imports are expected to increase further provided there is no substantial change in China's import policy.